



IN REPLY REFER TO:

**United States Department of the Interior**  
**NATIONAL PARK SERVICE**  
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P.O. Box 25287  
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N3615 (2350)

August 21, 2012

Raymond Werner  
Chief, Air Programs Branch  
Environmental Protection Agency, Region 2  
290 Broadway, 25<sup>th</sup> Floor  
New York, New York 10007-1866

EPA Docket ID: EPA-R02-OAR-2012-0457

Dear Mr. Werner:

The National Park Service (NPS) has reviewed the Environmental Protection Agency (EPA)'s proposed "Approval and Promulgation of Air Quality Implementation Plans; United States Virgin Islands; Regional Haze Federal Implementation Plan" (FIP) published in the Federal Register on June 25, 2012. We agree with EPA that sources outside the island of St. John are major contributors to visibility impairment at Virgin Islands National Park (NP). We also agree that expected emissions reductions from marine vessels under the North American Emissions Control Area and from the HOVENSA petroleum refinery on St. Croix under the 2011 Consent Decree are appropriate to include in the long term strategy for regional haze.

However, EPA's technical analyses of local anthropogenic contributions are less rigorous than we expected EPA to propose as meeting the requirements of the regional haze rule. The regional haze program is a national program that depends on consistency across states and territories in implementation. While we recognize the unique circumstances of island jurisdictions, adequate data and analyses are the basis for a successful program. Hawaii and EPA Region 9 faced similar challenges in developing sufficient technical data, for example, but delivered a much stronger technical product to support the regional haze plan. Our major concerns are discussed below.

### **Contributions to Visibility Impairment**

The IMPROVE measurements of fine particle mass and light extinction at the Virgin Islands NP demonstrate that visibility impairment at the park is predominately due to coarse mass, seasalt, sulfate, and fine soil. Saharan dust is a well understood contributor to fine soil on the 20% worst visibility days and along with seasalt is a natural, uncontrollable emission source. Coarse mass could be due to transport or local sources, natural and anthropogenic, but EPA made little effort to distinguish source contributions.

There are several episodes of elevated sulfate that could be due to local anthropogenic sources such as industry or marine traffic, or due to atmospheric transport of emissions from other islands or the U.S. mainland. There are also episodes of elevated organic carbon that suggest vegetative burning. The back trajectory analyses presented in the docket are illustrative, but not comprehensive. A single table identifies possible source areas for each pollutant species on the four highest impact days in 2001 to 2004. Example trajectories presented lead to the conclusion that sources on nearby islands as well as long distance transport are potential contributors to haze at St. John.

### **Emissions Inventory**

EPA presented an inventory for the island of St. John but not for the other islands or the Virgin Islands as a whole. The proposal indicates that additional point sources were considered but these emissions are not presented. It is unclear why EPA did not include emissions from St. Thomas and St. Croix. EPA cited prevailing winds from east to west, but the trajectories analyses indicate that winds on 20% worst visibility days could deliver pollutants from St. Thomas or St. Croix to St. John. We recommend that EPA develop a complete inventory for the Virgin Islands.

We agree that based on the emissions inventory data presented, emissions from marine traffic are important to control and that substantive reductions in sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) from marine traffic are expected by 2018. We recommend adding estimated emissions from marine traffic between neighboring islands in the vicinity of St. John to the existing estimates presented for marine vessels entering and leaving the port at St. John.

### **Air Quality Modeling for the Best Available Retrofit Technology (BART)**

The modeling contractor's March 2011 report summarizes the modeling methods used for BART and reasonable progress analyses. EPA did not share the report with the Federal Land Managers prior to the June 2012 public proposal. The modeling methods fall short of other BART modeling efforts nationally.

The contractor's report indicates that the CALMET meteorological model relied on very limited surface and upper air data. We expected that EPA would have charged the contractor to use the available 2009 MM5 meteorological model outputs to supplement available observations as inputs to CALMET. We do not agree with using the average

98<sup>th</sup> percentile over four years as the threshold to determine if a source is subject to BART.

In previous BART modeling exercises when best practices for air quality models were not used, parties have agreed to use more conservative assumptions in interpreting results to ensure that sources are not unduly exempt from BART evaluation. Use of 1<sup>st</sup> high (instead of 8<sup>th</sup> high) results or impact comparison to 20% best (instead of annual averaged) natural conditions are examples of more conservative assumptions. For consistency, the maximum impact (or other form of conservative assumption) should have been used in the Virgin Islands BART exemption modeling.

In calculating visibility impact results utilizing the new IMPROVE equation, the CALPOST processor version 6.221 is the regulatory version of CALPOST and has been reviewed and accepted by EPA and the FLMs since approximately 2008. Version 6.221, not the earlier spreadsheet tool, should have been used here.

#### **BART Analysis for HOVENSA L.L.C.**

We agree with EPA that the HOVENSA petroleum refinery on the island of St. Croix is subject to BART, even though we disagree with the specific BART modeling methods. EPA and the Department of Justice entered into a Consent Decree with HOVENSA in June 2011 to reduce emissions and install control technology. In 2012, HOVENSA indicated it would close the refinery while continuing to operate as an oil storage facility. HOVENSA is no longer operating as a refinery. We agree with EPA that as long as HOVENSA retains the air quality permit, the Consent Decree should remain in place. If the refinery is to restart, an emissions control analysis should be conducted prior to restart.

#### **Reasonable Progress Goals and Long Term Strategy**

The 2012 modeling report includes contribution analyses for additional source sectors on or near the island of St. John. The reasonable progress analyses are qualitatively informative and suggest relative importance of the major source sectors. However, given the uncertainty in the air quality modeling, it is difficult to conclude that there will be a 0.16 dv improvement in visibility due to the expected emissions reductions from marine sources and HOVENSA. EPA concludes that some progress is sufficient and no further action is reasonable at this time.

EPA should have considered the IMPROVE measurement data for 2005 to 2009 that indicate visibility impairment and sulfate contribution to visibility impairment are increasing compared to the 2001-2004 baseline (Figure 1). At a minimum, EPA should determine the reason for these trends and explain whether these trends are consistent with its conclusion that existing emissions reductions are sufficient to demonstrate reasonable progress when visibility is currently degrading, not improving, on the 20% worst visibility days.

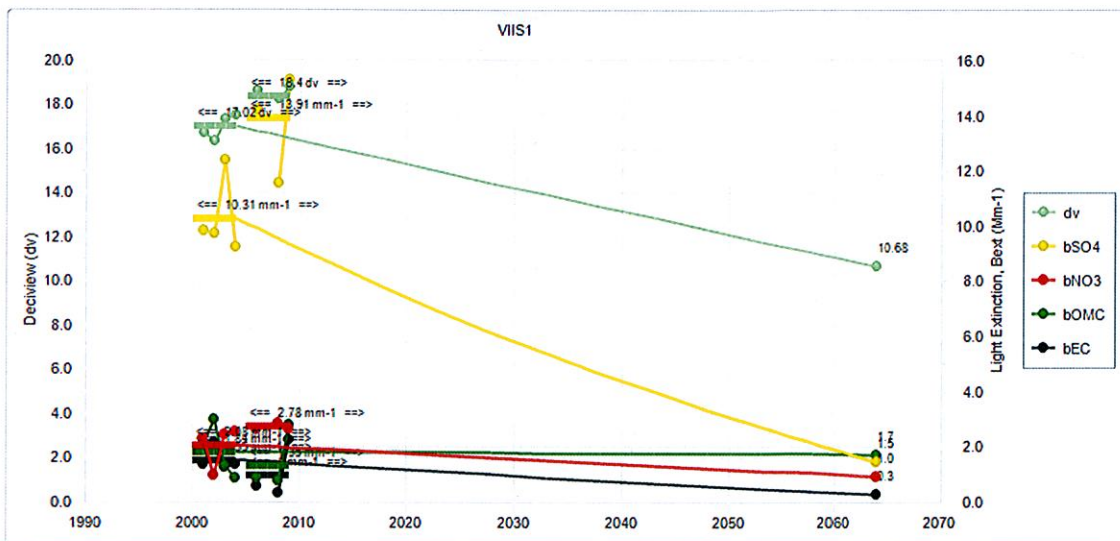


Figure 1. IMPROVE measurements of light extinction due to fine particles and visibility at Virgin Islands National Park on the 20% worst visibility days in 2001 to 2009.

### Consultation with Federal Land Managers

EPA began informal discussions of the technical challenges with the Federal Land Managers in 2008. However, prior to May 2012, EPA had not shared contractor reports (including emissions inventory report dated 2010 and modeling methods dated 2011) that would have allowed us to suggest improvements to the methods prior to the FIP proposal. We would like to be more substantively involved in future discussions for regional haze in the Virgin Islands; we believe the timing and extent of FLM consultation can significantly affect the success of regional haze planning.

We appreciate the opportunity to work closely with EPA Region 2 to improve visibility in our Class I areas. For further information regarding our comments, please contact Pat Brewer at 303-969-2153.

Sincerely,

Susan Johnson  
Chief, Policy, Planning and Permit Review Branch